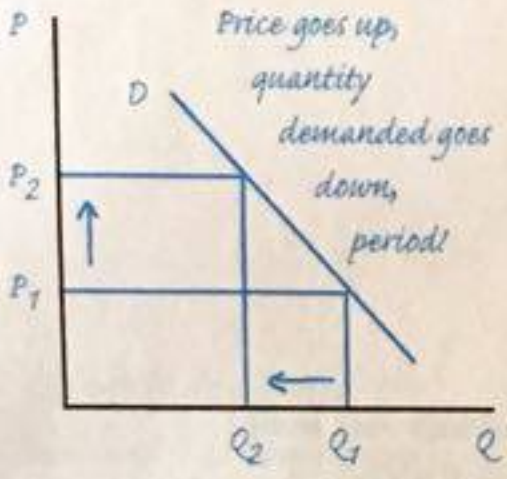
The Law of Demand

Law of demand: Negative relationship between price and quantity demanded, other things being constant.

The pattern of which we're speaking is so fundamental that some economists have been willing to assign it the status of a law: *the law of demand*. We call it a "law" because it applies not only to water, but to *all* scarce goods. It states: *If the price of a good increases, holding other things constant, the quantity demanded will decrease. Likewise, if the price of a good decreases, other things constant, the quantity demanded will increase.*

This law asserts that there is a negative or inverse relationship between the amount of anything that people will want to purchase and the price (sacrifice) they must pay to obtain it. *Price and the amount demanded move in opposite directions*. At higher prices, consumers will plan to purchase less; at lower prices they will strive to purchase more. Would you agree that this generalization can be called a law? Or can you think of exceptions? (What about insulin? Not yet—we want to tantalize you a bit longer.) Why would people be indifferent to the sacrifices they must make? Or prefer more sacrifice to less? That is what a person would be doing who bought more of something when the cost of obtaining it increased. Other things being constant, fewer tablets will be purchased at $899 compared to $599 each; more people will sign up for cell phone plans when the rates come down; Old Navy is likely to be crowded with eager teenage shoppers during a storewide sale. More students will reconsider a college education as the cost continues to escalate.



Demand and Quantity Demanded

In using the concept of demand, you must remain alert for the possibility that something else has changed in addition to the price. Your best protection is a clear grasp of the distinction between *demand* and *quantity demanded*. Commentators on economic events often use the word *demand* as a shorthand term for *quantity demanded*. That can and often does lead to error, as we shall see later.

Demand in economic theory is a relationship between two specific variables: price and the amount people plan to purchase. You can't state the demand for any good simply as an amount. Demand is always a *relationship* that connects different prices with the quantities (or amounts) that people would want to purchase at each of those prices. We express that fact by saying that demand is a schedule (in Table 3–1) or a curve. A movement from one row of the schedule to another, or from one point on the curve to another point on the curve, should always be called a change in the quantity demanded, not a change in the demand. *Pay close attention to how we state the law of demand*. We don't say that *demand* increases when the price decreases, for example. Instead, we say that the *quantity demanded* increases.

Demand is a curve. Quantity demanded is a specific amount that consumers plan to buy at a specific price.

Substitutes everywhere: The concept of demand

We see this all at work in Figure 3–1. If the price had been set at $0.01 per gallon, and was then lowered to $0.005 per gallon, the *quantity demanded* would increase from 160 to 320 gallons per day. At a price of $0.04, the *quantity demanded* would be only 40 gallons per day. That's what the households strive to purchase at the 4-cent price. But the *demand* would be unchanged through all this, because *the demand is the whole curve or schedule*. Notice in our graph that the demand curve didn't move or shift or change. *We moved along the given demand curve.* The demand curve itself illustrates the different quantities the consumers plan to purchase at various prices. Perhaps the best way to keep this distinction straight is to remember that the word *curve* or the word *schedule* should always be able to follow the word *demand*. If you say "demand" but cannot, in the context, say "demand curve," you have made a common mistake. You probably mean not *demand*, but *quantity demanded*.

Demand Itself Can Change

"Are you telling us that demand itself *never* changes?," asks the skeptic from the back of the classroom. "Didn't you say that people will probably buy more high-pressure showerheads or whatever when water itself becomes expensive? They are buying those things because *water* is more expensive, *not* because showerheads are cheaper, right? So then your 'law of demand' doesn't apply to showerheads—because people are buying more of those even though their price hasn't changed!"

This student raises a good question. And, although his conclusion is in error, we respect the fact that he's paying close attention to everything we've said so far. So let's continue to pay attention as we try to further develop the demand concept.

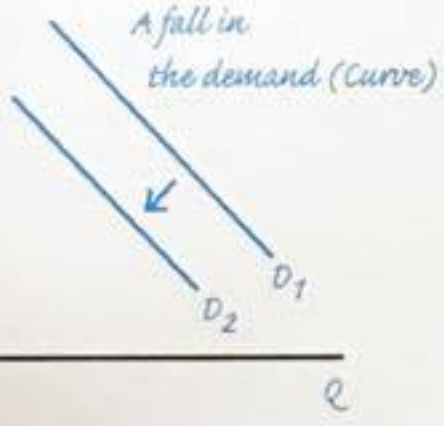
The law of demand does hold true, across the board. It says that if the price of a good changes, *holding other things constant,* the quantity demanded for that good will also change. The key here is the phrase *other things constant*. Price is an important influence on our choices, but we also recognize that there are *other influences, besides the price itself*, that might encourage people to increase or decrease their consumption of goods and services. *If people's willingness to buy changes even though the price of the good in question remains constant, then overall demand for that good must have changed.* The demand curve itself *can* shift. Demand for any particular good *can* increase or decrease.

Let's return to our original example regarding the townspeople's demand for water itself. All along we were assuming that the only important source of change is the change in the price of water. We held constant all other influences on the townspeople's willingness to purchase water. Quantity demanded changed *only* because the price of water changed. For the overall *demand* to

Table 3–2

Price per Gallon ($)	Gallons per Day	Gallons per Day
0.07	40	15
0.04	60	25
0.02	140	55
0.01	240	100
0.005	400	200

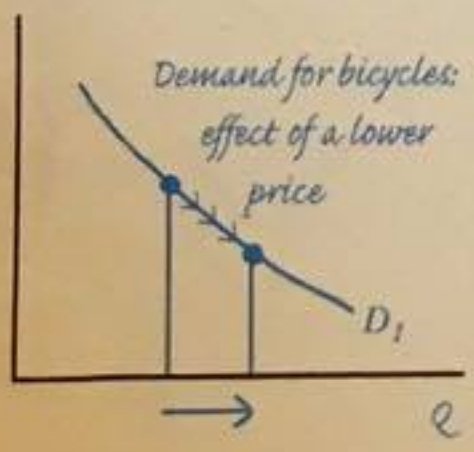
increase, something would have to occur that made the households want to purchase more water than before at each price. At a price of $0.005 per gallon, people might choose to consume *more than* the original 320 million gallons per day, if, for example, they strive to water their lawns more often due to a drought in the region. *The demand (curve) would shift* to the right. Or suppose, instead, that the community discovers some trace contaminants in the water supply. Households might reduce their uses of water. (Drinking? No. Showering? Only briefly. Maintaining the swimming pool? No. Watering lawns, why not?) Were this to occur, people would tend to consume less water than before, at any given price. Their overall demand would decrease. The *curve itself* would shift to the left.



If you would like to graph an increase in the demand for water, plot the quantities in the second column shown in Table 3–2. (Feel free to mark up the book. It's yours, not ours.) If you prefer to graph a decrease in demand, practice with the third column. You shall see, in either case, that for any given price per gallon, the quantity demanded would be higher or lower than before. *The law of demand still holds*. We still depict a *downward-sloping demand curve*. In each case there's an inverse relationship between price and quantity demanded. But the curve itself shifts to a new position.

Everything Depends on Everything Else

We can clearly isolate several influences that can cause a change in the demand for a good, influences that can "shift the demand curve," as it were. Any student of economics ought to be aware of these. Let's start with the most obvious.



A change in the number of consumers (demanders). A growing population among our townspeople would tend to increase the demand for water within the township; a shrinking population would tend to reduce it. As more teens receive their driver's licenses, and beg for Mom's car, that adds to the overall population of drivers, and the demand for gasoline would tend to rise – the curve would shift right. A growing elderly population, on the other hand, would

Do other people view the acre as a choice residential site? Does it have commercial or industrial potentialities? Would it be used for pasture if you did not purchase it? The cost you pay for the land will be determined by the alternative opportunities that people perceive for its use.

Marginal Opportunity Costs

If you are wondering at this point about the relationship between opportunity cost and marginal cost, you are wondering about the appropriate question. *All opportunity costs are marginal costs and all marginal costs are opportunity costs*. Opportunity cost and marginal cost are the same thing, viewed from different angles. Opportunity cost calls attention to the value of the opportunity forgone by an action; marginal cost calls attention to the change in the existing situation that the action entails. The full name for any cost that is relevant to decision making is *marginal opportunity cost*.

Mantra on costs: Only actions have costs; all costs are costs to someone; all costs lie in the future.

All such costs are costs of actions or decisions, all are attached to particular persons, and all lie in the future.

Costs and Supply

And now we get to the heart of the chapter—using our notion of marginal opportunity cost to explain the decisions to supply goods and services on the market. Just as demand curves indicate the marginal costs or sacrifices that people are willing to incur in order to obtain particular goods, so supply curves show the marginal costs that must be covered to induce potential suppliers to make particular goods available. We can use our familiar production possibilities frontier in Figure 4–1 to illustrate our logic.

A small Iowa farmer, let's call him Smith, considers producing soybeans and corn this season. If he devotes all his acreage to soybean production, he can produce 14.5 units. If he produces only corn instead, he can produce 10 units. His production possibilities frontier represents those two combinations, as well as all other possible combinations, given his acreage, the suitability of the soil for either crop, farm machinery, talents, and so on. Table 4–1 (below) shows the actual combinations on Smith's frontier. (You might notice that the frontier in Figure 4–1 is a curve, not a line. This illustrates that Smith faces increasing opportunity costs of producing each good. Were he to consider expanding his corn production, he sacrifices, of course, the opportunity to produce and harvest soybeans. Moreover, he uses portions of his farm that are successively less suited for corn production. The movement along the frontier represents the trade-offs—the opportunity costs—that Smith faces.)

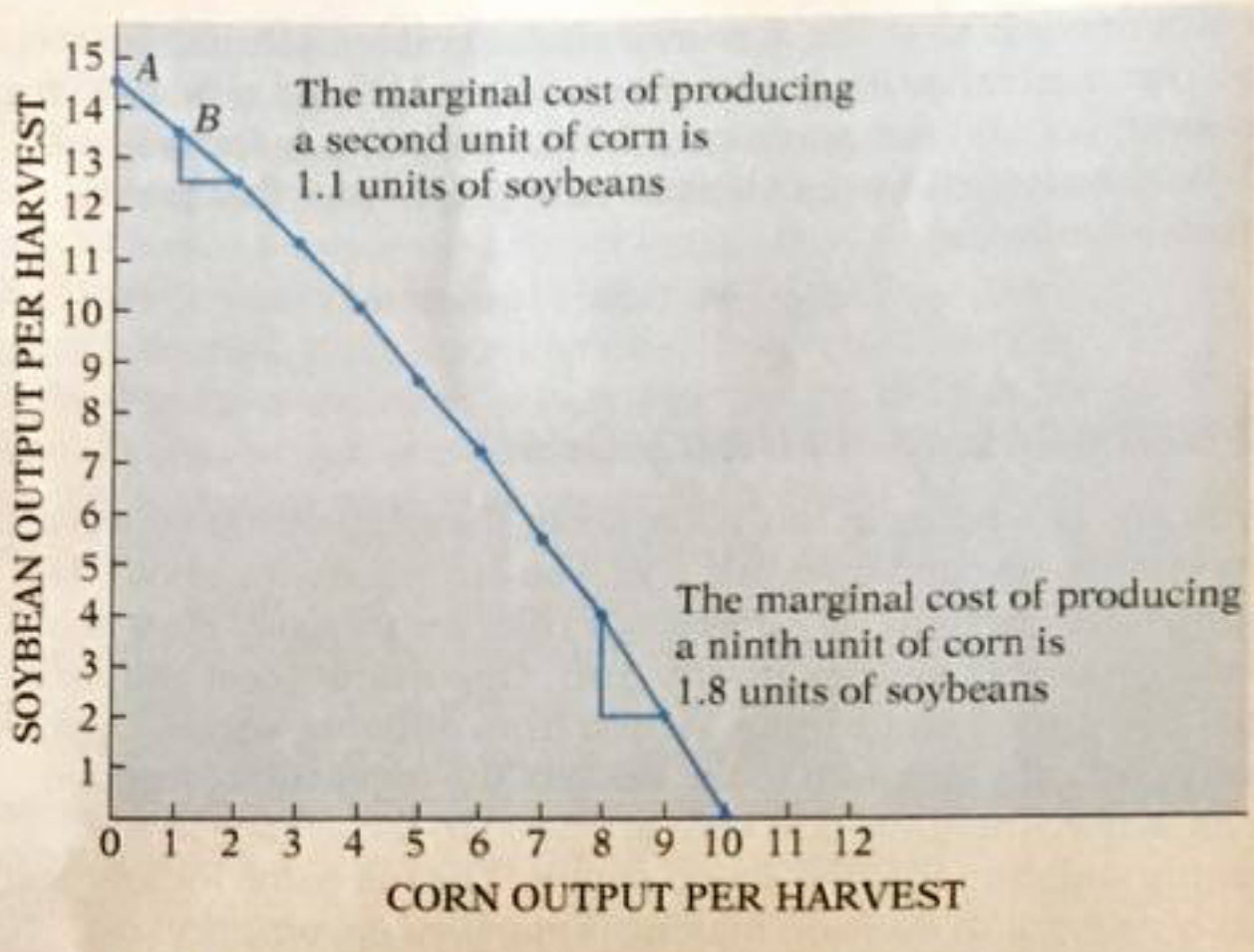


Figure 4–1 **The production possibilities frontier with rising marginal cost**

Smith's production possibilities frontier for corn and soybeans. He can produce at most 14.5 units of soybeans (and 0 units of corn) or 10 units of corn (and 0 units of soybeans), or any combination of the two on the frontier. Notice the bend to this particular frontier. It illustrates that corn can be produced only at higher and higher marginal cost

Table 4–1

Soybean Output per Harvest	Corn Output per Harvest
14.5	0
13.5	1
12.4	2
11.2	3
9.9	4
8.5	5
7.0	6
5.4	7
3.7	8
1.9	9
0	10

Suppose—keeping our numbers simple—the price of soybeans is $1 per unit (we will hold that constant throughout our story). Smith could use more information than just that. What matters to Smith is the *relative price* of soybeans compared to corn. He uses

that information to judge against his marginal opportunity costs of production, in order to determine how much of soybeans and corn to produce. Here's an easy example. Suppose corn sells for $0 per unit. Smith would then clearly produce say, only 14.5 units of soybeans. Why? If he produces 1 unit of corn, he can produce only 13.5 units of soybeans (we move downward along the frontier). His marginal cost would be $1 (the sacrificed market value of 1 unit of soybeans). *What would he gain?* A unit of corn, with a *zero* market value. What's important is that the *marginal cost* of producing the first unit of corn is $1. What if, instead, corn were priced at 90 cents per unit? If Smith willingly produced 1 unit of corn, he would gain an additional 90 cents, but at an additional cost of $1—the value of his sacrificed unit of soybeans. Smith wouldn't be enticed to produce corn at *that* relative price.

Market prices help us economize more effectively.

Suppose, instead, that the price of corn were also $1 per unit. Then Smith would be inclined to produce *up to but no more than* 1 unit of corn. At most, he would plan to harvest 13.5 units of soybeans and 1 unit of corn. He would move downward along the frontier, from point *A* to *B*. He would sacrifice $1 worth of soybeans and gain $1 worth of corn.

What is Smith's marginal cost of producing a second unit of corn? He'd have to reduce soybean output from 13.5 to 12.4 units. That's a difference of 1.1 units, with a market value of $1.10 (again, holding the price of soybeans constant at $1.00 per unit). *Smith would consider producing a second unit of corn only if the market price of corn were to compensate for his marginal opportunity cost of producing corn—in this case if the price of corn were $1.10 per unit.* What is Smith's marginal cost of producing a third unit of corn? He'd sacrifice 1.2 units of soybeans, with a market value of $1.20. Smith would be willing to increase corn output to 3 units only if he were compensated for *that* additional cost. *Smith would consider producing a third unit of corn only if the market price of corn were $1.20 per unit.*

We can summarize all of this in Table 4–2 in the next page.

We're now ready to draw three important conclusions. First, producers consider marginal costs of production when deciding upon which outputs, and which levels of output, to produce. Second, relative prices further inform producers of the marginal costs, and marginal benefits, of their alternative production plans.

The Supply Curve

Our third conclusion is best represented by the information in Figure 4–2, which simply plots the information from our Table 4–2. The bars in the graph show Smith's marginal opportunity costs of producing corn, measured in market values when the price of soybeans is given at $1.00 per unit. (The height of the first bar is $1.00, the second is $1.10, the third is $1.20, and this continues

Table 4–2

Corn Output (units)	Marginal Opportunity Cost (holding price of soybeans = $1.00)($)
1	1.00
2	1.10
3	1.20
4	1.30
5	1.40
6	1.50
7	1.60
8	1.70
9	1.80
10	1.90

to the tenth, which has a height of $1.90.) We've seen how Smith would supply 0 units of corn if the relative price of corn were under $1.00 per unit; he'd supply 1 unit only if the price rose to $1.00 per unit; he'd supply 2 units if the price were $1.20. The upward-sloping line illustrates Smith's *supply curve for corn*. Each bar represents the marginal cost of producing corn. The total area underneath the supply curve represents Smith's *total costs of production* (the adding up of all the marginal costs of production).

The supply curve illustrates the alternative amounts of a good supplied at alternative prices. In our story, they represent Smith's planned outputs at different corn prices. Because he faces higher marginal opportunity costs of production, Smith would plan to increase corn production only if he expected to be compensated by higher corn prices. Smith would produce up to 10 units of corn if he expected to receive $1.90 per unit.

This story about farming tells in a simplified way what underlies all supply curves. Supply curves are the marginal opportunity cost curves of making various quantities of a good available. As the price people are willing to pay for a good rises, that price persuades people with a marginal opportunity cost of supplying the good that is less than the price to shift the resources they own or control into supplying the good in question. Other things being constant, a change in price of the output increases quantity supplied, not the overall supply curve.

Supply Itself Can Change

But the supply curve itself can change. Anything that changes the marginal cost of production will tend to change (or shift) the overall supply curve, too. A rise (or fall) in the price of a factor

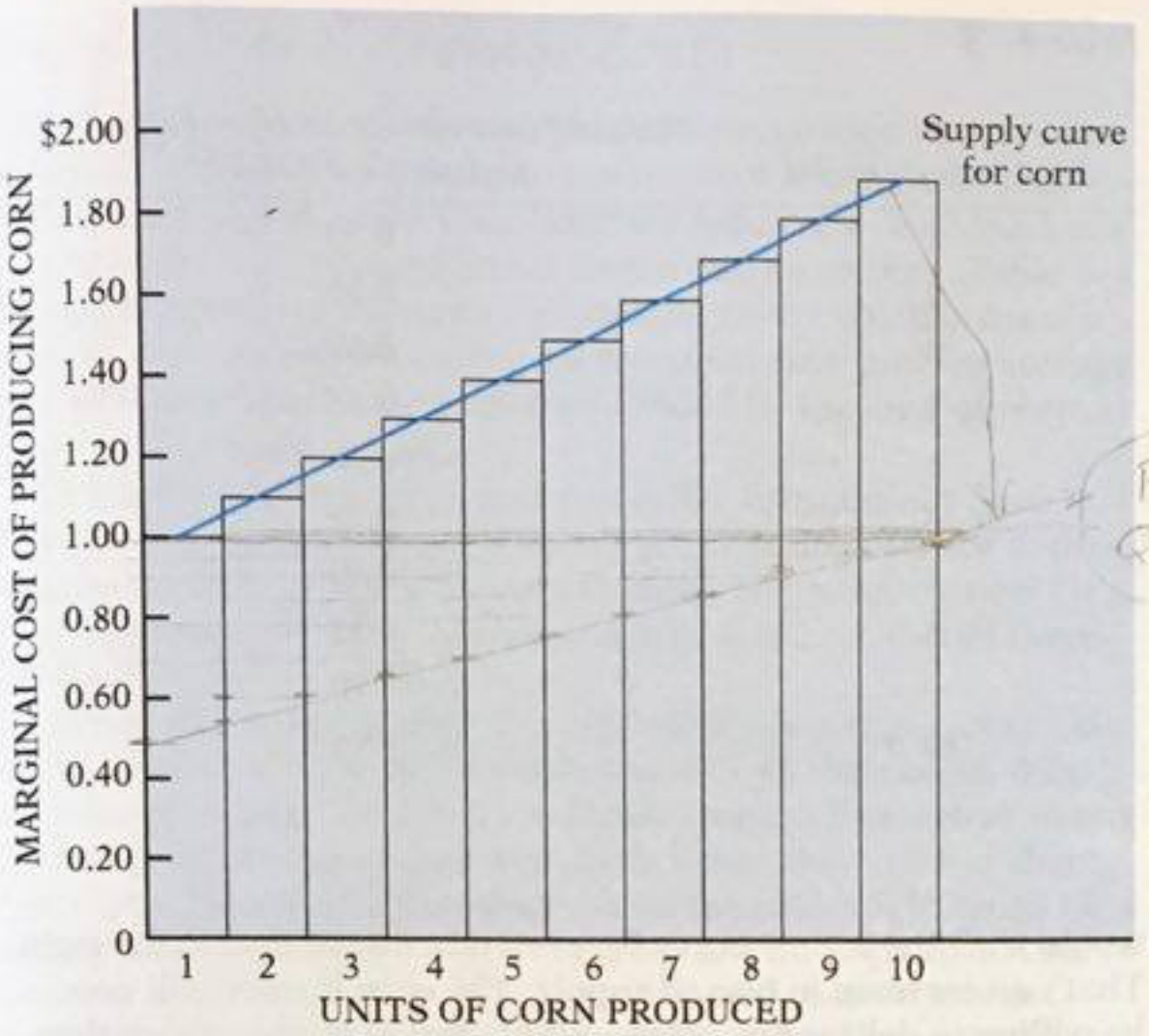


Figure 4–2 **The supply curve is the marginal opportunity cost curve of making various quantities of a good available**

The bars in the graph depict the marginal cost (measured in dollars) of producing each unit of corn. Smith will want to ensure that the price he can receive compensates him for his last unit produced. Therefore, if the price is $1.10, he'll produce 2 units. A price of $1.80 will encourage him to produce 9 units. In this way, we derive an upward-sloping supply curve for corn. The higher prices increase his quantity supplied, reflecting the law of supply.

of production would raise (or lower) marginal costs, and thereby lead to a shift of the overall supply curve. Higher marginal costs would shift the supply curve upward and to the left; lower marginal costs would shift it downward and to the right. Technological changes, such as new innovations that reduce marginal costs, would tend to increase overall supply. Resource deterioration, on the other hand, would likely decrease overall supply.

Notice from our tables and graphs that a change in the relative price of an alternative product will tend to generate a change in the supply curve. It will provide the producer an incentive to reconsider his options. Suppose, for example, that the price of soybeans alone falls from $1.00 (as in our original example) to $0.50 per unit. The lower market value of soybeans reduces the farmer's marginal opportunity cost of growing corn, as shown in Table 4–3. It will be cut in half for each unit of corn output. That

Table 4–3

Corn Output (units)	Marginal Opportunity Cost (holding price of soybeans = $0.50)($)
1	0.50
2	0.55
3	0.60
4	0.65
5	0.70
6	0.75
7	0.80
8	0.85
9	0.90
10	0.95

would shift the supply curve for corn downward and to the right. That's an increase in overall supply. The corn farmer will now be willing to deliver any given unit of corn at a lower price than before. We can view it in another way as well: The farmer will be willing to supply a larger quantity of corn at any given price. If you would like to practice graphing this increase in the supply of corn, plot the quantities shown onto Figure 4–2.

Do you recall from the previous chapter how consumer demand may change if consumers expect higher or lower prices in the future? The same holds true for producers. We all act on our expectations. *A change in the expected price of the producer's output will tend to change the overall supply of that output.* If producers expect lower prices for their outputs six months from now, they may strive to *increase* deliveries of their present output to the market, attempting to "supply more while the price is still high." Likewise, if they expect more favorable prices six months from now, they may choose to supply *less today*, which would shift the supply curve upward and to the left. By postponing their present supply, they are not necessarily reducing their *current production*. In anticipation of the higher future price, they are reducing the *current quantities that they plan to deliver to today's market.*

And finally, a change in the overall number of suppliers tends to shift the market supply curve. The entry of more competitors would tend to increase overall supply, whereas exit would tend to decrease overall supply. Typically, expected profits will encourage entry and thereby increase market supply. Expected losses will encourage exit and reduce market supply, as producers search for more profitable uses of their resources. We shall discuss the role of profit and loss quite extensively in Chapter 7.

a market is a *person*. How many times have we heard some expert on the evening news or the financial channels say that Wall Street was "excited" or "nervous" about the latest economic data, or that the stock market "hopes" or "expects" that Ben Bernanke at the Federal Reserve will engage in yet another round of quantitative easing? Perhaps someday when the conditions are right, one of those experts will report that "the stock market has awakened bloated, with terrible cramps and a bad headache, and has called in sick today." Although that kind of statement might make the news more interesting, the economic way of thinking recognizes that *individuals* have hopes, expectations, cramps, and headaches; *markets* don't.

Even economists themselves use misleading metaphors. They often refer to market systems as "automatic" or "self-adjusting," giving the impression that markets function without the intervention of human beings! Many economists make it sound as if the market is some kind of mechanical *thing*, like a thermostat. That's wrong. Market systems are *entirely composed* of demanders and suppliers, who are real human beings pursuing the projects that interest them, economizing on the basis of the relative scarcities that they confront, and negotiating arrangements to secure what they want from others by offering others what they in turn want to obtain.

It is best to avoid these common but misleading interpretations of markets. The market is not a person, place, or thing. *The market is a process of plan coordination among sellers and buyers*. When economists use the terms *supply* and *demand*, they are really talking about these kinds of continual, ongoing negotiations among individuals.

The Basic Process

We're now ready to consider, with the help of a graph, the supply and demand process. Let's consider the market for relatively inexpensive acoustic guitars, the kinds bought by beginning and intermediate pickers throughout the country. Figure 5–1 depicts the market. Notice the downward-sloping market demand curve. That reflects an essential point from Chapter 3—the law of demand. People would plan to purchase more guitars as the relative price falls, and plan to purchase fewer guitars as the relative price increases. The *quantity demanded* increases or decreases, not the overall demand curve, when only the price of guitars changes. Next, notice the upward-sloping supply curve. Recall from Chapter 4 that supply curves generally slope upward, which reflects the increasing marginal opportunity costs of producing more guitars. Making more acoustic guitars requires many specialized resources, from specific grades of spruce and mahogany to the

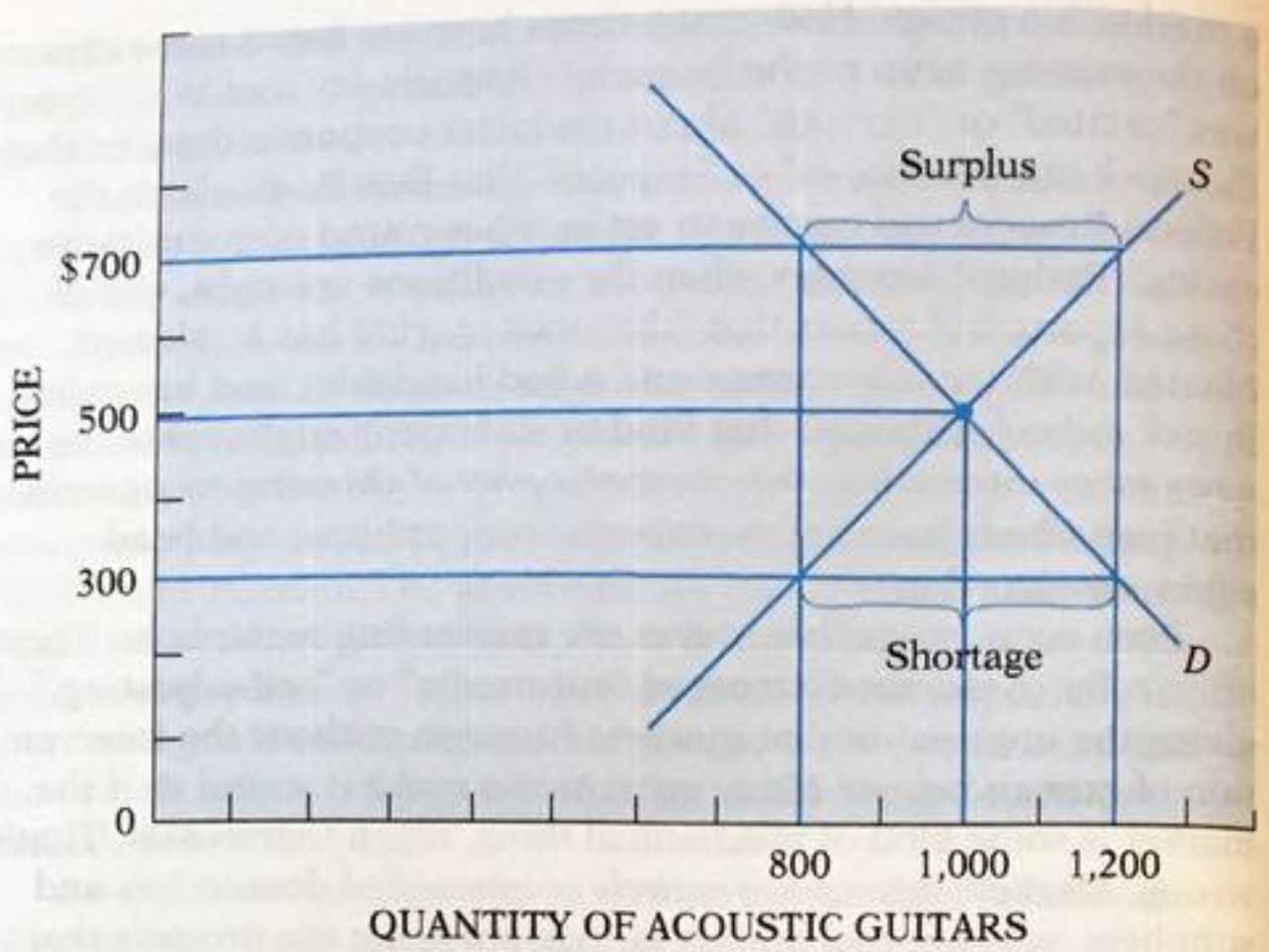


Figure 5–1 **Supply and demand in the acoustic guitar market**

The market clears at $500. A surplus of 400 guitars exists at the $700 price, and a shortage of 400 guitars occurs at the $300 price.

highly skilled labor of the workers. For guitar producers to obtain spruce and mahogany, they must *bid* those resources away from *other* productive uses, such as Christmas trees, fine cabinets, incense holders, and the many other goods that people desire that can also be made from those materials. Higher prices for the guitars will induce producers to make more guitars.

Full market coordination: X marks the spot.

Notice where the supply and demand curves intersect. There, the market price is $500 per guitar and the market output is 1,000 guitars. At the $500 price, note that the quantity demanded is 1,000 guitars, which is exactly equal to the quantity supplied. In this event, the plans of guitar buyers are *fully coordinated* with the plans of guitar producers.

In a free market, of course, producers can charge any price they wish, and consumers can offer any price they wish. So let's suppose that the market price were substantially higher than $500. Say it's $700. If guitar producers plan to receive $700 per guitar, how would they respond? The upward-sloping supply curve helps illustrate the answer. At $700, the quantity supplied would increase well beyond 1,000 guitars, to 1,200. (Supply doesn't increase—only the quantity supplied!) But never forget that the market is made up of two sides, sellers and buyers. While sellers would increase output at the higher price, how would potential buyers respond? The demand curve helps illustrate *that* answer: At the $700 price, people would reduce their planned

purchases of guitars. Quantity demanded (not overall demand!) would decrease to only 800 guitars.

Who would be able to fulfill their plans, and whose plans would become frustrated? Consumers, as a whole, would be able to purchase all the guitars they wish at $700 apiece (the quantity demanded is 800), but producers would find that they have overproduced. They made and planned to sell 1,200 guitars (the quantity supplied). That's a difference of 400 guitars, guitars that are undesirably piling up in the manufacturers' inventories. Here, the market is not fully coordinated. A *surplus* of guitars has emerged. *A surplus occurs when the quantity supplied is greater than the quantity demanded*. In our example, there is a surplus of 400 guitars. Sellers often become aware of a surplus—aware of their own errors — by the unplanned piling up of their inventories. They simply aren't selling as much as they had counted on.

Surplus: $Q_d < Q_s$ (frustrated sellers).

How can producers unload their unplanned inventories of guitars? Perhaps they can point guns to the heads of terrified people and force them to purchase the remaining guitars for $700 apiece. But that goes against the *rules* of the free market. Perhaps one manufacturer can sell more guitars by burning down another competitor's guitar-making facilities. But that, too, breaks the rules of the game. Perhaps they can seek legislation requiring children to learn how to play guitars, which might improve demand and sales. That is an effort of manipulating and changing the rules of the game in their favor, but that takes quite a lot of time and political maneuvering and is a costly activity. What they can do, and what generally happens in free markets, is that producers will *cut their own prices*.

Sellers compete with sellers.

Indeed, we would predict that the market price of guitars would fall from $700 to $500. As the price falls, potential buyers would be more receptive: The quantity demanded (not the overall demand!) would increase from 800 to 1,000 guitars. At the same time, quantity supplied (not the overall supply!) would decrease from 1,200 to 1,000. Then the surplus would disappear: The plans of both buyers and sellers would fully mesh; the market would become fully coordinated at the $500 price. Sellers would have no further incentive to compete against other sellers by lowering their prices.

Question: Does "surplus" mean no more scarcity for this good?

Shortage

Finally, consider the opposite case. Suppose the current market price were well *below* $500. At a price of $300 per guitar, people would eagerly plan to purchase a total of 1,200 guitars (the quantity demanded), but producers would produce and plan to sell only 800 guitars (the quantity supplied). While the plans of the producers would be achieved, many customers would be frustrated as they try to purchase a guitar, but find them sold out. Here we have a *shortage*, which is the opposite of a surplus. *A shortage occurs when the quantity demanded is greater than the quantity supplied*. Customers might sense a shortage by facing unusually long lines or finding items out of stock. Sellers might

Shortage: $Q_d > Q_s$ (frustrated buyers).

Buyers compete with buyers.

have to unexpectedly dip into their planned inventories, discovering that they are selling more than they originally expected.

What can a frustrated buyer do? Breaking into the shop and stealing is a violation of the law. So is putting sand in the gas tank of another customer who might race out before you to purchase the last remaining guitar in stock. People are, however, free to offer a higher price for a guitar. If consumers begin bidding up the price of guitars, how will sellers respond? By producing more guitars. As the market price rises from $300 to $500, notice that the quantity supplied will increase, from 800 to 1,000 guitars. At the same time, the increased price will reduce quantity demanded from 1,200 to 1,000 guitars. Whether people actually begin to bid the price up, or sellers find that they can substitute for the consumer bidding process by raising their own prices *and* selling more guitars, there are tendencies for the market price to rise and the overall shortage to disappear.

Substitutes for everything!

Competition, Cooperation, and Market Clearing

People often argue that buyers compete with sellers in the market economy. Is this true? Back in Chapter 2 Brown and Jones *cooperated* with each other by exchanging stouts and lagers. Does the exchange for *money* alter that cooperative relationship between two trading parties? No. If you voluntarily purchase a guitar for $20, $200, $500, or whatever, you and the seller have found a way to cooperate with each other—that's the essence of mutually beneficial exchange, whether the exchange takes place through money or barter. Money facilitates the *ability* to induce these acts of cooperation.

Sellers cooperate with buyers.

Competition does, of course, occur, and like cooperation, competition is rampant throughout the market process. Rather than competition between buyer and seller, however, buyers tend to compete with other buyers, and sellers tend to compete with other sellers.

Consider the case of a shortage. Frustrated guitar shoppers compete with one another by offering higher money prices or by demonstrating their own willingness to pay the higher posted price. The bidding process eliminates the shortage. The sellers of guitars would like, of course, the highest prices they can receive, and will eagerly try to accommodate buyers who are offering more money. In the opposite case of a surplus, sellers compete among themselves by trying to attract customers and move excess inventories. It is not a rivalry between buyer and seller; it's a rivalry between guitar sellers. The rivalry works itself out not through violence and mayhem—as long as the rules of the game are respected and enforced!—but by price reductions. "Every other shop is charging $700 for this guitar. Because I see you love this guitar, I'll give you a break. $595. And I'll even throw in

free strings." The seller is finding a way to compete against other sellers *and* cooperate with you. The competitor who was only offering free strings with her $700 guitar will soon find that's not enough. She will soon lower her price as well. (When you shop for a car, is the seller intent on competing with you or the dealer down the street? You want a low price, but do you fear the seller, or do you fear that your offer may be too low, and the car may be sold to a buyer who offered $750 more than you did?)

Therefore, the price tends to rise during times of shortages and fall during times of surpluses. The competitive bidding process runs its course once the shortage or surplus is alleviated. In our example, that ends at the $500 price. Individual buyers will have no incentive to increase their bids without the shortage. Individual sellers will have no incentive to lower their price without the surplus. Economists typically refer to that price as an *equilibrium price*, as the "forces" of supply and demand have worked themselves out, and there is no further tendency for the price to change. But again, that sounds a bit too mechanical, as if the market were a thing. The authors instead prefer the term *market-clearing price*. To say that the market is clear is to say there is neither a shortage nor a surplus, The plans of buyers have become fully coordinated with the plans of sellers.

Market clearing: $Q_d = Q_s$ (plans of buyers and sellers are fully coordinated).

The economic way of thinking emerged in part to explain the phenomenon of market clearing. It's not only the market for guitars that tends to clear. *Free markets for any good or service show a tendency to clear.* The "laws" or principles of supply and demand help us explain *why* and *how* markets generally tend to clear, how people with limited information nevertheless find ways to accomplish many of their plans.

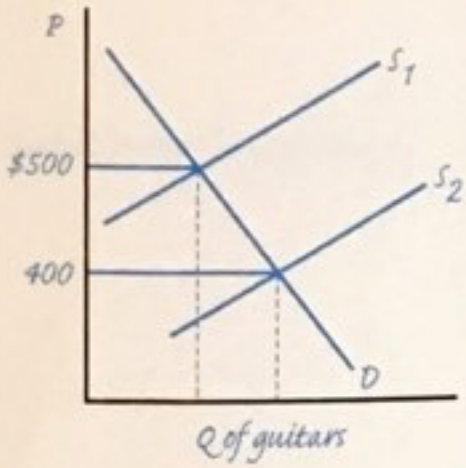
One final but crucial point. A commercial society doesn't require expert economists to clear markets. It instead requires that there are effective rules of the game that allow people to buy, sell, and trade their property—to coordinate their own plans—as they best see fit. Economists are useful in explaining how market processes coordinate people's plans and generate wealth and economic growth, something that a lot of people still don't understand. People often fail to see that market clearing is an unintended consequence of the specific choices that individuals make. Guitar buyers couldn't care less about the overall state of the market. They want guitars at an acceptable price. They can't possibly know everything there is to know about the state of the guitar industry. Same for guitar sellers. They pursue their own goals, too, geared toward making a living and a profit. The tendency for market clearing is not planned and engineered by economists, government agencies, nor even producers or consumers. Markets tend to clear as an *unintended* consequence of people competitively bidding and cooperatively exchanging, following their own projects, plans, and goals, with inescapably limited information and knowledge.

No need for experts!

Changing Market Conditions

And now for a little further practice. Our discussion centered around the tendency for the market to clear with *given* supply and demand curves. But, as you learned in Chapters 3 and 4, demand and supply curves themselves can shift. Let's practice a couple of those shifts.

Suppose, for example, the price of spruce fell, with other prices (for skilled labor, mahogany, and other materials) unchanged. Your first challenge is to decide whether this would affect the supply or the demand curve. Lower spruce prices would tend to reduce the marginal opportunity costs of making guitars. More guitars would be produced as a result. And, recall that the supply curve is derived from the "height" of those marginal costs. Lower marginal costs mean a rightward shift of the supply curve. As more guitars come on the market, and the *overall supply* increases, the price would fall from $500 to $400. (What would happen if supply increased, but the price stayed at $500? A surplus would emerge. Sellers would compete by lowering their prices until the surplus is eliminated.) A *new* market-clearing price would emerge, at $400 per guitar. (Notice that the demand curve for guitars has not changed. The *quantity demanded* increased as the price fell from $500 to $400.)



Consider a different example. What if the price of *electric* guitars were to increase? How would this initially affect the market for acoustics? Electric and acoustic guitars are generally considered good substitutes. People who planned to buy electric guitars would revise their plans in light of the higher price. Some would switch to acoustic guitars instead, while a couple of others would consider trombones, accordions, or other things to purchase with their money. Nevertheless, this raises the *overall demand for acoustic guitars*. We could depict that with a rightward shift of the demand curve in the market for acoustic guitars. A new market-clearing price would emerge, at $600 per acoustic guitar.